

N-Series Fiber Optic Cable Management System

User Manual



N-Series Fiber Optic Cable Management System

User Manual, Part Number 138727

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About Telect

Telect offers complete solutions for physical layer connectivity, power, equipment housing and other network infrastructure equipment. From outside plant and central office to inside the home, Telect draws on more than 25 years of experience to deliver leading edge product and service solutions. Telect is committed to providing superior customer service and is capable of meeting the dynamic demands of customer and industry requirements. This commitment to customer and industry excellence has positioned Telect as a leading connectivity and power solution provider for the global communications industry.

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N-Series Fiber Optic Cable Management System

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Chapter 1: Description

N-Series Fiber Optic Cable Management System

1.1 Overview

N-Series is an advanced, integrated fiber optic cable management system. It provides a central location for fiber splicing, patching, and storage. It includes a chassis, one or more trays, and accessories. N-Series is designed for a 19" or 23" equipment racks and can accommodate central office, outside plant, and customer premise environments.

N-Series is a completely integrated system. Depending on the configuration you order, it can include

- network frame relay racks and accessories
- three types of chassis
- three types of trays: patch, splice and storage
- routing and protection hardware for fiber cable
- multifiber cable assemblies, and 2mm or 3mm fiber cable assemblies

N-Series chassis come in three sizes: single-tray, four-tray, and six-tray configurations. Each metal chassis includes a rear access door, spring-loaded door latches, cable management hardware, and mounting screw.

The following are the three types of trays that can be placed in the N-Series chassis:

- Splice
 - rear access - IFC and pigtails enter tray from rear
 - left rear/right front
 - combination right rear/left front - IFC and pigtails enter trays from front and rear
- Patch
- Storage

Each plastic tray includes provision for slack cable, cable management hardware, designation strips, and warning labels.

1.2 N-Series Trays and Chassis

1.2.1 Patch Trays

Pre-configured N-Series patch trays help to minimize installation time and manage cable. All standard network capacities and connector types are available.



Figure 1 - Patch Tray

1.2.2 Splice Trays

The N-Series line includes splice trays (with heat-shrink fusion splices) for applications where patches and splices must be segregated in separate trays. Fiber counts range includes 12 and 24 fibers to match standard applications.

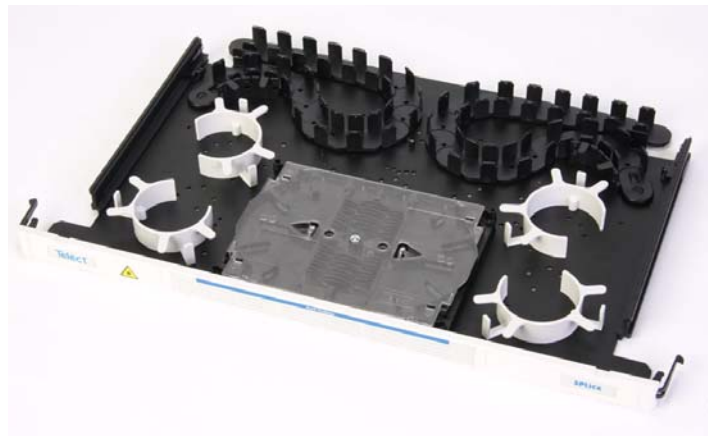


Figure 2 - Splice Tray

1.2.3 Storage Trays

Engineered to hold the excessive patch cord length increasingly found in today's network racks, each tray stores up to 24 3-mm jumpers.

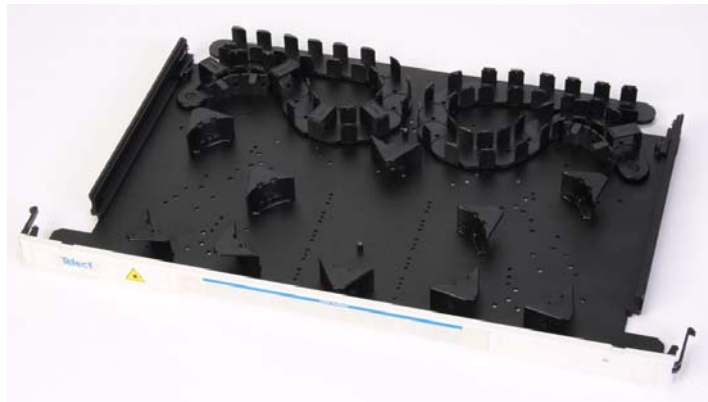


Figure 3 - Storage Tray

1.3 N-Series Flexible Chassis

Telect N-Series Chassis are designed to offer the ultimate in high cable termination density. Chassis sizes range from 1 RU to 4 RU (19-inch width) to fit any capacity requirement and maximize rack space. The following chassis configurations are available:

- 4 RU high/6-tray chassis
- 3 RU high/4-tray chassis
- 1 RU high/1-tray chassis



Figure 4 - N-Series Chassis (4RU)

1.4. System Specifications

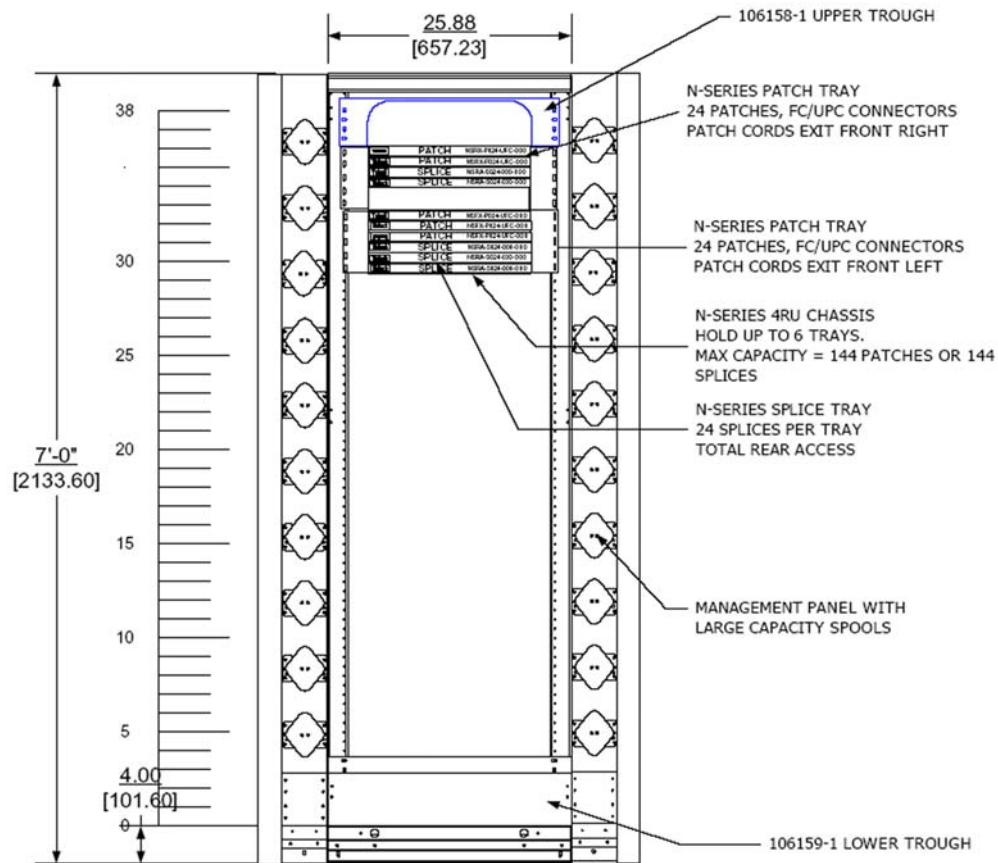


Figure 5 - Sample N-Series Bay Configuration

1.4.1 Mechanical

1.4.1.1 Dimensions

4 RU Chassis: 19" W x 7" H x 10.4" D
483 mm W x 178 mm H x 264 mm D

3 RU Chassis: 19" W x 5.25" H x 10.4" D
483 mm W x 133 mm H x 264 mm D

1 RU Chassis: 19" W x 1.75" H x 10.4" D
483 mm W x 44 mm H x 264 mm D

Minimum bend radius: 30 mm throughout system

Laser radiation protection: Adapter location prevents exposure

1.4.1.2 Connections

Termination count: Up to 144 per chassis

Termination type: SC/UPC, SC/APC, FC/UPC, LC/UPC

Supported multifiber cables: IFC

Supported patch cables: Simplex or duplex, 2.0 mm (recommended), 3.0 mm

1.4.3 Environmental Specifications

Humidity 0 to 90%, non-condensing

Temperature -5 to 55 degrees C

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Chapter 2: Installation

N-Series Fiber Optic Cable Management System

2.1 Installation Considerations

These installation procedures address patch trays in the rear access and front/rear access configurations.

Each chassis comes with a 19" or 23" rack-mount bracket with fiber routing components installed and the necessary screws for mounting.

The following equipment is required for installation:

- fiber cable preparation tools and materials
- screwdrivers
- test set

2.1.1 Inspection

Compare the contents of the N-Series shipping container with the packing list to ensure all of the components are there. Contact Telect or your supplier if anything is missing: 1-800-551-4567 or getinfo@telect.com.

Telect is not liable for shipping damage. If the shipping container is damaged, keep it for the carrier's inspection. Notify the carrier.

Keep the container until you have checked equipment operation. If you experience any problems, contact Telect at the number or e-mail above.

2.2 Installing Trays

2.2.1 Rack-Mounting the N-Series Chassis

1. If possible, mount the chassis intended for splicing between 20" and 50" from the floor for easy access and central location.
2. Mount the chassis to the rack with four 12-24 mounting screws.

2.2.2 Installing the Trays

This procedure provides instructions for chassis that do not have trays already installed.

1. Line up the left side of the left tray guide with channel in the chassis.
2. Line up the right side of the tray-guide with channel in chassis
3. Close tray until it clicks.
4. Attach front links if installed to fiber routing components.
5. Open rear access door on chassis.
6. Attach rear links to fiber routing components.



Figure 6 - Installing Tray



Figure 7 - Attaching Rear Links

2.3 Installing Cable Management

2.3.1 Installing Cable Management Hardware

1. Attach clamp (Part # 027-1000-1001) to either a mounting flange or directly to the rack using the supplied screw.

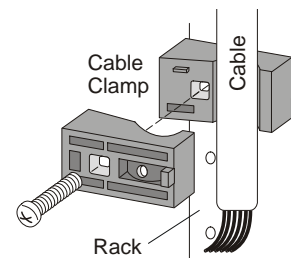


Figure 8 - Cable Clamp

2.3.2 Securing Multi-Fiber Cable

1. Attach cable to the rack above or below the unit and route the sub-units to the desired location.



Figure 10 - Cable Attachment and Routing (side view)



Figure 9 - Cable Attachment and Routing

2.4 Splice Tray Cabling Instructions

2.4.1 Cable Preparation

1. Prepare cable for installation.
 - a. Bring the cable to the proper dimensions before installing it into the splice tray.
2. Telect recommends following the dimension guidelines; however, if more storage is desired, the 900 micron length can be increased.
 - a. From the overall jacket breakout to subunits should be 17.5". This allows the overall jacket to be secured to the back of the chassis and the subunits to be secured at the exit of the links.
 - b. The 900 micron length should be 105". This allows three loops around the spools and also two loops inside the splice tray.
 - c. Each external loop is approximately 15.75". Each loop in the splice tray is approximately 18".

2.4.2 Tray Cabling Instructions

These instructions apply to all trays except the top tray in each chassis.

1. Working from the FRONT of the bay, open the tray you intend to cable.
2. Remove the splice cassettes from the tray by removing the center screw.
3. Close the tray.
4. Slide all trays above the tray you are cabling out.
5. Working from the BACK of the bay, remove back cover from chassis to expose links.



Figure 11 - Back Cover of Bay

6. Push all links from above trays to the sides of the chassis.
7. Open all link lids on the incoming path.

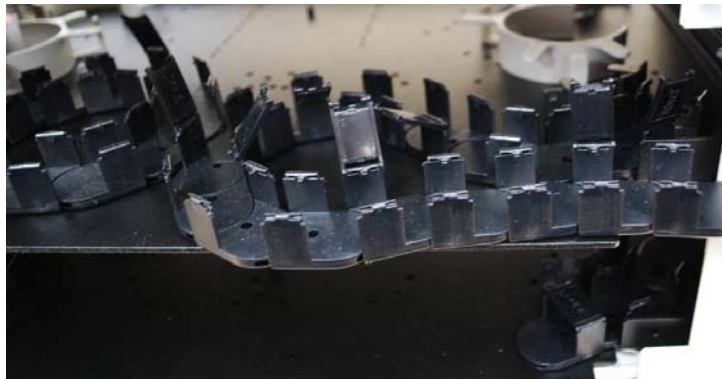


Figure 12 - Open Link Lids

8. Place the coiled 900 micron fiber in the area from where the splice cassettes were removed.

9. Secure overall jacket to end link at back of chassis.

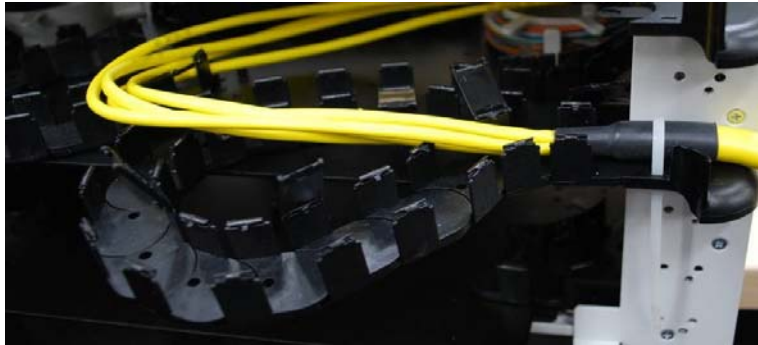


Figure 13 - Securing Jacket to Link

10. Route subunits through the links.



Figure 14 - Routing Subunits

11. Close all link lids.



Figure 15 - Closed Link Lids

12. Working from the FRONT of the bay, slide all trays above the tray you are cabling in.

13. Slide the tray you would like to cable out.

14. Secure the fiber at the exit of links.



Figure 16 - Securing Fiber at Exit

15. Place first splice cassette in chassis.

16. Wind fibers #1 - 12 around the storage spools.

17. Enter the splice cassette and secure fibers to cassette with tie.

18. Place lid on splice cassette.

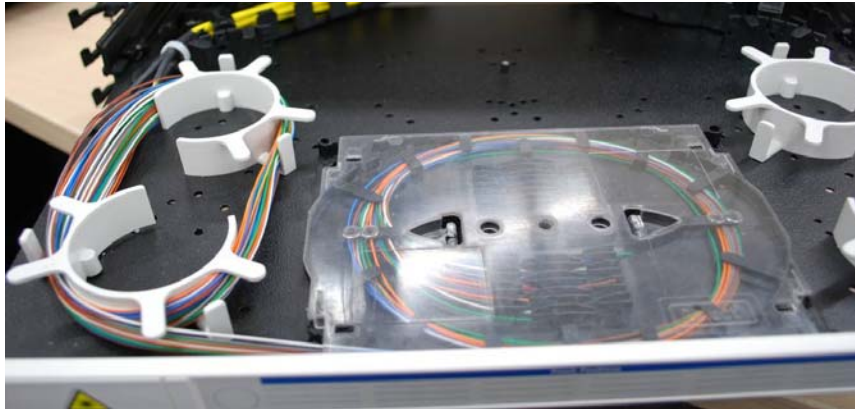


Figure 17 - Lid on Splice Cassette

19. Place the next splice cassette on top of the first one.

20. Wind fibers #13 - 24 around the storage spools.

21. Enter the splice cassette and secure fibers to cassette with tie.

22. Place the lid on the splice cassette.

23. Secure both cassettes with screw removed in Step 2.

24. Continue with the rest of the trays in the chassis.

25. When finished with all trays, re-install the rear door.

2.4.3 Top Tray Installation

These instructions apply to the topmost tray only.

1. Working from the BACK of the bay, remove the rear door.
2. Gently pull links out of the back of the chassis.
3. Open all visible link lids.



Figure 18 - Open Links

4. Place 900 micron in location where the splice cassettes were located.
5. Secure the overall jacket to the end link at the back of the chassis.
6. Route the subunits through as many links as possible.



Figure 19 - Routing Subunits through Links

7. Close all visible link lids.
8. Working from the FRONT of the bay, slide the top tray out.
9. Open the link lids that are now visible.
10. Place the fiber subunits into the rest of the links.

11. Close all visible link lids.

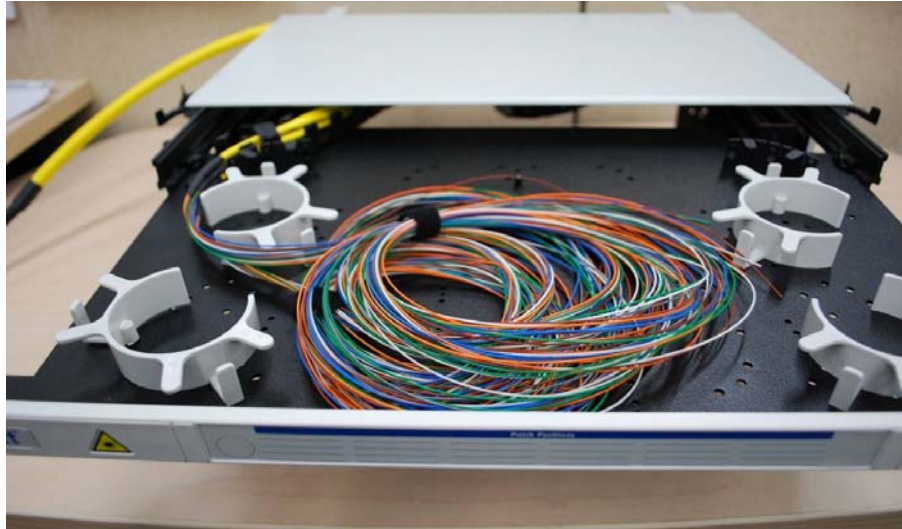


Figure 20 - Cables in Splice Tray

Continue from Step 15 in previous section.

2.5 Splicing

2.5.1 Preparing and Protecting Multi-Fiber Strands

1. Extend the cable's subunit from the cable clamp to the appropriate rear link on the N-Series panel.

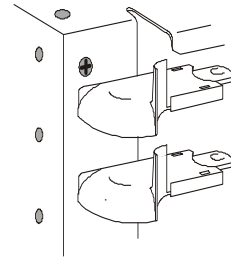


Figure 21 - Rear Entry Link

2. Secure the subunit to the entry link with a cable tie threaded through the slots in the link

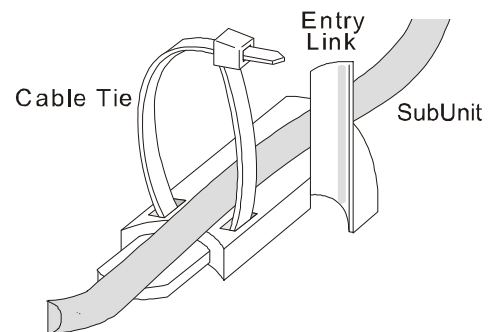


Figure 22 - Securing the Subunit

2.5.2 Routing and Securing Pigtails at the Chassis

Bring the pigtails for splicing to the appropriate entry link on the side opposite of where the multi-fiber cable enters the splice tray. Loosely secure the bundle to the link with a cable tie threaded through the slots in the link. Do not tighten the cable tie at this time.

2.5.3 Splice Tray Cable Routing

1. To route the multi-fiber or pigtails within the splice tray, remove the fiber channel from the side of the tray.
2. Open the splice tray and remove the plastic splice compartment cover.
3. Detach the fiber channel from its tray link in either of the following two ways:

- Lift up on the locking tab of the tray link with a small screwdriver and pull off the channel.
- Using the following four-step procedure:

- a. Remove the tray link screw.
- b. Close the splice tray and detach the channel from its entry link.
- c. Push a small screwdriver into the last small hole underneath the attachment point to release the locking tab.
- d. Pull the channel from the entry link.

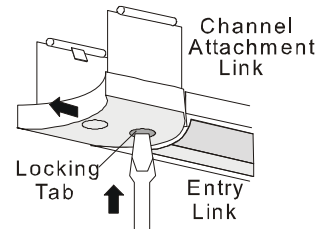


Figure 23 - Channel Detachment

4. Remove the channel from the tray.
5. Open the gate clips on fiber channel.
6. Place the multi-fiber subunits or pigtails into the fiber channel.
7. Secure multi-fiber/pigtails in the channel by closing gate clips.
8. Slide the tray-link end of the fiber channel back into the splice tray, and snap or screw the tray link back into position.
9. Snap the attachment link of the fiber channel onto the appropriate entry link.
10. Remove the jacket from the pigtails at the point where they just extend beyond the tray link, before entering the routing guides.

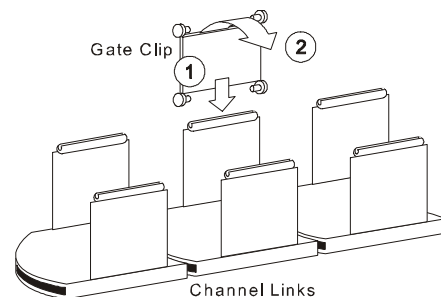


Figure 24 - Gate Clips

11. Place the fibers and the pigtails into the routing guides at the rear of the splice tray. Guide the fibers and the pigtails behind both spools and down to the front of the splice tray. Fibers and pigtails should cross each other behind the spools.

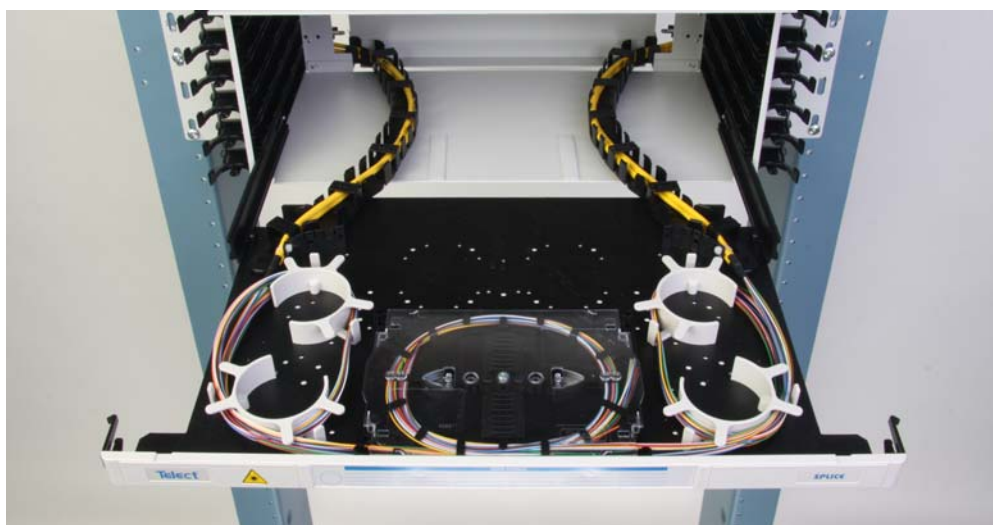


Figure 25 - Splice Tray Fiber Routing

2.5.4 Splicing and Storing Fiber

Do not remove the splice tray when splicing cables.

1. Guide two fiber strands into the rear-most splice position. Adjust their lengths by spooling the slack, so that after splicing they will lay neatly across the splice tray.
2. Unspool the two fibers and move them to your splice table.
3. Prepare the fibers, then splice them according to the splice manufacturer's instructions.
4. Rewrap the slack around the spools and place the completed splice into the splice pad.
5. Repeat steps 1 through 4 for remaining splices, working toward the front of the splice pad.
6. Identify each splice on the tray's designation strip.
7. Reattach the splice compartment cover and close the splice tray.

2.6 Patching

2.6.1 Patch Tray Cable Routing

1. Open the patch tray.
2. Detach the fiber channel from its tray link in either of two ways:
 - Lift up on the locking tab of the tray link with a small screwdriver and pull off the channel.
 - Using the following four-step procedure:

- a. Remove the tray link screw.
- b. Close the patch tray and detach the channel from its entry link.
- c. Push a small screwdriver into the last small hole underneath the attachment point to release the locking tab.
- d. Pull the channel from the entry link.

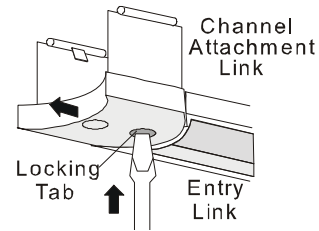


Figure 26 - Channel Detachment

3. Remove the channel from the tray.
4. Open gate clips on fiber channel.
5. Place the pigtails into the fiber channel that connects to the rear of the tray.
6. Place the jumper cables into the channel that connects to the side of the tray.
7. Secure multi-fiber/pigtails in the channel by closing gate clips.
8. Slide the tray-link end of the fiber channel back into the patch tray.
9. Snap the attachment link of the fiber channel onto the appropriate LINXS chassis entry link.
10. Open the tray and reattach the channel's tray link.

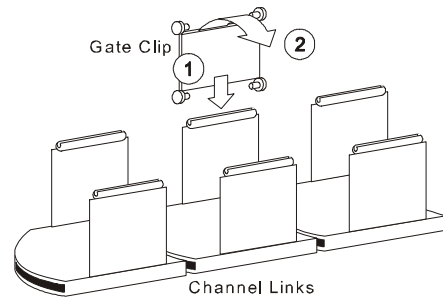


Figure 27 - Gate Clips

2.6.2 Patching and Storing Fiber

1. Wrap the pigtails entering the patch tray at the rear fiber channel around the slack cable spools, then connect them to the rear of their respective adapters.
2. Pull the jumper cables into the left or right side of the tray, and route these cables through the guides in the tray.
3. Connect the jumper cables to the front side of their respective adapters. Once these cables are in place, attach gate clips to hold the cables in place.
4. Close the patch tray.



Figure 28 - Patch Tray in Chassis

2.7 Storing Cables

You may use the N-Series storage to store excess patch cords and as a cross-over point for patch cords.

1. Open the storage tray.
2. Place the patch cords into the fiber channels.
3. Secure the cords in the channel with the gate clips supplied with the tray.
4. Route the cords around the spools to take up the slack.
5. Close the tray.



Figure 29 - Storage Tray in Chassis

Chapter 3: Service

N-Series Fiber Optic Cable Management System

3.1 Owner Maintenance

Telect's N-Series Cable Management System does not require any preventative maintenance. If equipment is not working properly, contact technical support and be advised of the following warning and alert.

WARNING

WARNING! Fiber cables transmit laser or invisible infrared light. To avoid eye damage or blindness, never look directly into fibers or connections.

ALERT

ALERT! Only qualified technicians may install and maintain this product.

3.2 Technical Support

By e-mail: getinfo@telect.com

By phone: 888-821-4856 or 509-921-6161

3.3 In-Warranty Service

Contact your Telect equipment distributor, or call a Telect Customer Service Representative:

1-800-551-4567

1-509-926-6000

Telect will repair or replace defective products within the limits of the warranty. See "Repacking for Shipment" in this section.

NOTE: Call a Customer Service Representative for a Return Material Authorization (RMA) before returning any equipment.

3.4 Out of Warranty Service

The procedure for out-of-warranty service is the same as for in-warranty service; however, Telect charges a processing fee. You must submit a Purchase Order along with a Return Material Authorization (RMA) before returning equipment. Call a Customer Service Representative for assistance in acquiring these forms.

The processing fee guarantees a repair estimate and is credited against actual material and labor costs.

3.5 Repacking for Shipment

1. Tag the equipment showing owner's name, address, and telephone number, together with a detailed description of the problem.
2. Use the original shipping container if possible. If you do not have it, package the equipment in a way to prevent shipping damage. Include the RMA inside the container and legibly print the RMA number on the outside of the package, near the shipping address.
3. Insure the package.

NOTE: Telect is not liable for shipping damage.